

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Liu, Zhongdu

Assignee:

Title: Solid State Electrical Switch

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Examiner: F. Fleming

Group Art Unit: 2836

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San Jose, California

October 17, 2001

BOX NON-FEE AMENDMENT  
COMMISSIONER FOR PATENTS  
Washington, D. C. 20231

DECLARATION OF LLOYD EBISU UNDER 37 CFR 1.132

Dear Sir:

I, Lloyd Ebisu, declare as follows:

1. I am employed as test manager by Solidone Corporation, 1391 Geneva Dr., Sunnyvale, CA 94089.

2. On October 15, 2001, I tested a conventional BA2 mechanical-contact electrical switch ("BA2 switch") and a solid state electrical switch, and prepared a report entitled "Waveform Test Report" ("test report"), which is attached hereto as Exhibit A.

3. The solid state electrical switch used in the test is shown in front and side views on pages 7-8 of the test report.

3. The test equipment used included a TDS 3032 0.3 GHz, 2.5GS/s Color Digital Phosphor Oscilloscope ("oscilloscope"), a Fluke T5-1000 Electrical Tester ("current meter"), an AC power source, a Fluke 891V True RMS Digital Multimeter ("volt-meter"), a

LAW OFFICES OF  
SKJERVEN MORRILL  
MACPHERSON LLP

25 METRO DRIVE  
SUITE 700  
SAN JOSE, CA 95110  
(408) 453-9200  
(408) 453-7979

SOLIDONE ST-120/25A functional test equipment ("functional test equipment"), and a variable resistive load ("test load").

4. The AC power source, the current meter, the volt-meter, and the load were mounted on the functional test equipment.

5. The test equipment was connected to the conventional mechanical-contact electrical switch as shown in the first circuit on page 2 of the test report.

6. The test equipment was connected to the solid state electrical switch as shown in the second circuit on page 2 of the test report.

7. The test was conducted under 25°C and 47% relative humidity, using a 120 volts 60 Hz sine wave (as measured by the volt-meter) provided by the AC power source.

8. Page 2 of the test report shows the voltage waveform across the test load, as displayed on the oscilloscope, when the BA2 switch was conducting (i.e., the "on" state); the test load current was 1.1A, as measured by the current meter.

9. Page 3 of the test report shows the voltage waveform across the test load, as displayed on the oscilloscope, when the solid state electrical switch was in the "on" state; the test load current was 1.1A, as measured by the current meter.

10. From the waveforms on Pages 3-4 of the test report, I observed a less than 1 volt difference in the "on" state peak voltages (approx. 168 volts, nominally) between the BA2 switch and the solid state electrical switch, and almost indistinguishable sine wave waveforms between the BA2 switch and the solid state switch, indicating AC power line waveform integrity in both the BA2 switch and the solid state electrical switch, and less than 1% difference in power loss in the solid state electrical switch relative to the BA2 switch.

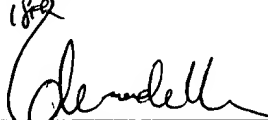
11. Page 5 of the test report shows the voltage waveform across the test load, as displayed on the oscilloscope, when the BA2 switch was not conducting (i.e., the "off" state).

12. Page 6 of the test report shows the voltage waveform across the test load, as displayed on the oscilloscope, when the solid state electrical switch was in the "off" state.

13. From the waveforms on Pages 5-6 of the test report, I observed no visible (i.e., less than 0.01 volts) voltage drop across the test load for both the BA2 switch and the solid state electrical switch, indicating complete current cut-off in both the BA2 switch and the solid state electrical switch in the "off" state.


All statements made of my own knowledge are true, and all statements made on information and belief are believed to be true. I acknowledge that any willful false statement and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the patent application and any patent issuing thereon.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on October 17, 2001.

  
Attorney for Applicant(s)

10/18/2001  
Date of Signature

Respectfully submitted,

  
Lloyd Ebisu

10/17/01

LAW OFFICES OF  
SKJRVEN MORRILL  
MACPHERSON LLP

25 METRO DRIVE  
SUITE 700  
SAN JOSE, CA 95110  
(408) 453-9200  
FAX (408) 453-7979